

claims priority to U.S. provisional patent application serial no. 60/071,908, filed January 20, 1998, entitled "Transglutaminase Linkage of Agents to Tissue" which is now abandoned. This entire reference is incorporated herein.

#160
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#16

In the Claims

Please delete claims 76, 82 and 85.

A marked-up version of the entire claim set is appended herewith as Appendix A. Please re-write the entire pending claim set as follows:

55. (Twice Amended) A composition of matter comprising:
a conjugate of a nonextracellular matrix protein, nonlabeling agent and a carboxamide-carrying linking molecule,
wherein the agent is selected from the group consisting of a sunscreen agent, a cosmetic, an enzyme, a coloring agent, a pharmaceutical agent, a member of a ligand/receptor pair, a tissue sealant, a bulking agent, a hair conditioning agent, a hair fixative, a moisturizing agent, a depilatory agent, an anti-nerve gas agent, a film forming agent, a vitamin, an insect repellent and a component of a high affinity noncovalent coupling pair,
wherein the agent is not itself a substrate of transglutaminase,
wherein the agent, free of conjugation to the linking molecule, does not contain the linking molecule, and
wherein the linking molecule comprises at least two contiguous linked glutamines, and is a substrate of transglutaminase.

57. (Once Amended) The composition of claim 55, wherein the linking molecule comprises a polymer of amino acids containing at least 20% glutamines.

56. (Twice Amended) A composition of matter comprising:
a conjugate of a nonextracellular matrix protein, nonlabeling agent and a polymer,
wherein the agent is selected from the group consisting of a sunscreen agent, a cosmetic, an enzyme, a bulking agent, a hair conditioning agent, a hair fixative, a moisturizing agent, a depilatory agent, an anti-nerve gas agent, a film forming agent, a vitamin, a coloring agent, a pharmaceutical agent, a member of a ligand/receptor pair, a tissue sealant, an insect repellent and a component of a high affinity noncovalent coupling pair,
wherein the agent is not itself a substrate of transglutaminase, and

wherein the polymer comprises at least 3 contiguous lysines attached to one another by peptide bonds, and is a substrate of transglutaminase.

³
D³ 67. (Twice Amended) The composition of claim ^{7 5}66, wherein the polymer is a polymer of amino acids, wherein at least 20% of the amino acids are lysines.

D⁴ 71. (Twice Amended) A kit comprising
a package housing:
a first container containing the composition of claim 55 and
a second container containing transglutaminase.

D⁵ 74. (Once Amended) The composition of claim ¹55, wherein the linking molecule comprises at least 5 linked units, each unit being a carboxamide-bearing substrate for transglutaminase.

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D⁵ 75. (Once Amended) The composition of claim ¹55, wherein the linking molecule is 4 or more contiguous glutamines attached directly to one another by peptide bonds.

77. (Once Amended) The composition of claim 55, wherein the component of a high affinity noncovalent binding pair is selected from the group consisting of a ligand of a ligand-receptor complex, and a receptor of a ligand-receptor complex.

78. (Once Amended) The composition of claim 55, wherein the agent is selected from the group consisting of a cholinesterase and a phosphodiesterase.

79. (Once Amended) The composition of claim 55, wherein the agent is conjugated to the linking molecule by a bond that is hydrolyzable under physiological conditions.

80. (Once Amended) The composition of claim 55, wherein the agent is a pharmaceutical agent and the agent is conjugated to the linking molecule by a bond that is hydrolyzable under physiological conditions.

D⁶ 81. (Once Amended) The composition of claim ¹55, wherein the agent is a nonprotein.

83. (Once Amended) The composition of claim 66, wherein the agent is conjugated to the linking molecule by a bond that is hydrolyzable under physiological conditions.

84. (Once Amended) The composition of claim 66, wherein the agent is a nonprotein.

¹⁷
~~86~~ (Once Amended) The kit of claim ~~71~~, further comprising

⁷
a third container housed by said package, the third container containing a linking molecule that is a substrate of transglutaminase and that is capable of covalently attaching to the composition contained in the first container in the presence of transglutaminase when the composition and the linking molecule are removed from the containers and contacted with each other.

87. The kit of claim 71, further comprising calcium housed by said package, except that said calcium is not in said second container.

³¹²
~~88~~ (Once Amended) A kit comprising

a package housing:

²⁵
a first container containing the composition of claim ~~66~~, and

⁸
a second container containing transglutaminase.

³⁷
~~89~~ (Once Amended) The kit of claim ~~88~~, further comprising

a third container housed by said package, the third container containing a linking molecule that is a substrate of transglutaminase and that is capable of covalently attaching to the composition contained in the first container in the presence of transglutaminase when the composition and the linking molecule are removed from the containers and contacted with each other.

90. The kit of claim 88, further comprising calcium housed by said package, except that said calcium is not in said second container.

²⁰
~~91~~ (Once Amended) A kit comprising

⁹
a package housing:

a first container containing the composition of claim ~~81~~, and

a second container containing transglutaminase.

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92. (Once Amended) The kit of claim ~~91~~²⁰, further comprising

D¹⁰
a third container housed by said package, the third container containing a linking molecule that is a substrate of transglutaminase and that is capable of covalently attaching to the composition contained in the first container in the presence of transglutaminase when the composition and the linking molecule are removed from the containers and contacted with each other.

93. The kit of claim 91, further comprising calcium housed by said package, except that said calcium is not in said second container.

94. (Once Amended) A kit comprising

a package housing:

a first container containing the composition of claim 84, and

a second container containing transglutaminase.

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95. (Once Amended) The kit of claim ~~94~~³⁹, further comprising

D¹¹
a third container housed by said package, the third container containing a linking molecule that is a substrate of transglutaminase and that is capable of covalently attaching to the composition contained in the first container in the presence of transglutaminase when the composition and the linking molecule are removed from the containers and contacted with each other.

96. The kit of claim 94, further comprising calcium housed by said package, except that said calcium is not in said second container.

97. (Once Amended) A kit comprising

a package housing:

a first container containing the composition of claim 102, and

a second container containing transglutaminase.

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98. (Once Amended) The kit of claim ~~97~~²², further comprising

a third container housed by said package, the third container containing a linking molecule that is a substrate of transglutaminase and that is capable of covalently attaching to the composition contained in the first container in the presence of transglutaminase when the composition and the linking molecule are removed from the containers and contacted with each other.

99. The composition of claim 55, wherein the agent is an enzyme.
100. The composition of claim 66, wherein the agent is an enzyme.
101. The composition of claim 100, wherein the enzyme is selected from the group consisting of a cholinesterase and a phosphodiesterase.

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~~102.~~ (Once Amended) The composition of claim ~~55~~, wherein the agent is in a microparticle.

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~~103.~~ (Once Amended) The composition of claim ~~66~~, wherein the agent is in a microparticle.

104. The composition of claim 55, wherein the linking molecule comprises at least three contiguous linked glutamines.

105. The composition of claim 55, wherein the linking molecule comprises at least four contiguous linked glutamines.

106. The composition of claim 55, wherein the linking molecule comprises at least five contiguous linked glutamines.

107. The composition of claim 55, wherein the linking molecule comprises a polymer of amino acids containing at least 30% glutamines.

108. The composition of claim 55, wherein the linking molecule comprises a polymer of amino acids containing at least 40% glutamines.

109. The composition of claim 66, wherein the polymer comprises at least 4 contiguous lysines attached to one another by peptide bonds.

110. The composition of claim 66, wherein the polymer comprises at least 5 contiguous lysines attached to one another by peptide bonds.

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~~111.~~ (Once Amended) The composition of claim ~~66~~, wherein the polymer is a polymer of amino acids, wherein at least 30% of the amino acids are lysines.